

Startups: a hidden lifestyle at MIT

Side projects
that change lives

By Deborah Chen
NEWS EDITOR

“Sleep, friends, p-sets — choose two,” is a common mantra at the Institute. But what happens when you add your own startup into the mix?

The spirit of entrepreneurship at MIT is alive and well; a report published in 2009 by Professor Edward Roberts, founder and chair of the Martin Trust Center for MIT Entrepreneurship, estimated that if the almost 26,000 companies founded by MIT alumni that still existed in 2006 were a country, it would have the 11th highest GDP in the world. MIT founded companies like Dropbox, a Web-based file hosting service founded in 2007 by Andrew Houston '05 and Arash Ferdowsi '08, and Quizlet, an online education tool that helps students study using flashcards and other learning tools, created by Andrew N. Sutherland '12 in 2005, have almost become household names. With Facebook's multibillion-dollar initial public offering announcement in February, no one can deny that the allure of startups for MIT students is higher than ever.

But what is it like to found your own startup, and work on it as a student? Why are startups so appealing? What resources are there for people interested in entrepreneurship? The startup environment at MIT can often be fragmented, sometimes hidden from view, but at their core, all startups seek to solve problems. It all begins with a single idea.

Chris Varenhorst '09, M.Eng

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Anderson's cause of death determined

Medical examiner rules death a result of accidental drug overdose

By John A. Hawkinson
and Ethan A. Solomon
STAFF REPORTERS

Brian G. Anderson '13 died of accidental “acute opiate intoxication with cardiac enlargement contributory,” the Mass. Office of the Chief Medical Examiner said

yesterday.

The medical examiner's office could not release any additional information, citing Mass. privacy laws, according to Terrel Harris, an office spokesman.

Opiates include oxycodone, heroin, Vicodin, codeine, and morphine, among many others. There

is no information about what drug in particular might have caused Anderson's death.

Anderson, a management major and wrestling team member from Redwood Falls, Minn., was found dead in his Next House dormitory room on Feb. 20. He was 21 years old.

His enlarged heart was unlikely to be a result of short- or long-term drug abuse, according to Dr. Piotr A. Kubiczek, assistant chief medical examiner for the Reno, Nev. area. It would take several years of prolonged drug abuse to lead

Anderson, Page 12



IAN M. GORODISHER—THE TECH

Members of the Class of 2014 board a bus to watch *The Hunger Games* Thursday night in a class movie trip.

MIT Libraries joins Ivy League partnership for access to over 50 million volumes

MIT Libraries recently became the newest member of the Borrow Direct program, a partnership between MIT and the Ivy League, which allows for MIT students, staff, and faculty to access over 50 million volumes available in libraries at Yale, Brown, Penn, Princeton, Dartmouth, Cornell, Columbia, and Harvard (which joined shortly before MIT, in January). The service expands library access

from the five million volumes currently available in MIT libraries.

Borrow Direct is currently a part of MIT's WorldCat catalogue, which can be used to search for books at MIT and other libraries nationwide. Participating books, along with other materials such as sheet music (but excluding multimedia items), have

Libraries, Page 13

Committee on Discipline releases 2010-2011 report

More personal misconduct; fewer academic cases

By Jessica J. Pourian
EDITOR IN CHIEF

The MIT Committee on Discipline (COD) gave its annual report Wednesday at the March faculty meeting in 10-250. Prof. Robert P. Redwine, the chair of the committee, presented the results from academic year 2010-2011.

The COD had fewer hearings last year, only five, down from the prior year's 12. There were 61 students were involved in the 30 reported incidents.

See charts on page 14 for details.

The number of assault and reckless endangerment incidents, 19, up from two, would normally be concerning, Redwine said, but many of the students were involved in one particular incident. He did not mention what the incident was.

No students were expelled last academic year, down from two in 2009-2010. Three students were suspended, down from eight. Institute faculty and staff submitted file letters for 15 stu-

dents as documentation for cases of misconduct did not result in a COD investigation.

Redwine expressed concerns about the drop in hearings for academic cases in 2011 (from 12 to five), suggesting that one possible explanation was that teaching staff might not be referring all necessary cases to the Office of Student Citizenship. He spoke about increasing outreach to teachers, especially new faculty, and emphasizing the importance of the role of the student citizenship office.

The increase in “serious personal misconduct, especially sexual” was concerning, Redwine said, but he drew attention to a positive possibility: The Institute has devoted more resources to outreach in such cases. He hopes that because of this, it may well be that the number has increased because more students are willing to come forward.

Redwine also mentioned that a re-

COD, Page 14



IAN M. GORODISHER—THE TECH

The student presidential search committee hosts an open forum in the Lobdell Dining Hall Thursday evening to gather student opinions on what students would like to see in the new president of MIT.

SENATE PASSES STARTUPS BILL

Will making it easier for startups to raise money create jobs? **WORLD & NATION, p. 2**

MYTHS ABOUT PLYOMETRICS

How accurate were Hamilos' plyometrics tips? **OPINION, p. 5**

AND MYTHS ABOUT THE MYTHS

Hamilos responds to critique of her instructions. **OPINION, p.5**



JUMP INTO 21 JUMP STREET

Going back to high school, with a twist. **ARTS, p. 9**

ALCATOR FUNDING SHOULD CONTINUE

MIT students should be involved in promoting domestic research. **EDITORIAL, p. 4**

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Major stock indexes fall, euro falls against the dollar

By Jack Ewing and Bettina Wassener
THE NEW YORK TIMES

FRANKFURT, Germany — A key indicator of business sentiment in Europe unexpectedly fell deeper into recession territory Thursday, compounding concerns about the global recovery following signs of slowing manufacturing in China.

Major stock indexes in Europe slipped and the euro fell against the dollar after a survey of purchasing managers suggested that growth in the eurozone shrank during the first three months of the year. That would be the second negative quarter in a row, meeting the definition of a recession.

The data suggests that the 17-nation euro area is still struggling even after a flood of cash from the European Central Bank helped assuage anxiety about a major banking crisis and credit crunch.

“The easing of the sovereign debt crisis has apparently failed to bring about a lasting improvement in business sentiment,” said Christoph Weil, an economist at Commerzbank, in a note to clients.

In China, weak external and domestic demand continued to weigh on the manufacturing sector in March, a survey released Thursday showed, raising expectations that the Chinese authorities would step up measures to revive economic momentum.

The survey of purchasing managers in the vast Chinese factory sector, released by HSBC, showed that activity had shrunk in March, for the fifth month in a row, as the Chinese economy felt the pain of feeble global economic activity.

China has become a major market for European products ranging from heavy machinery to luxury goods, so a slowdown there adds to problems in Europe.

The preliminary reading in the China survey for March dropped to 48.1, from 49.6 in February, HSBC said. Readings below 50 signal contraction, and even though the reading provides only an early insight into this sector of the Chinese economy, the drop came as a disappointment.

US relaxes some restrictions for counterterrorism analysis

By Charlie Savage
THE NEW YORK TIMES

WASHINGTON — The Obama administration is moving to relax restrictions on how counterterrorism analysts may retrieve, store and search information about Americans gathered by government agencies for purposes other than national security threats.

Attorney General Eric H. Holder Jr. on Thursday signed new guidelines for the National Counterterrorism Center, which was created in 2004 to foster intelligence sharing and serve as a terrorism threat clearinghouse.

The guidelines will lengthen to five years — from 180 days — the amount of time the center can retain private information about Americans when there is no suspicion that they are tied to terrorism, intelligence officials said. The guidelines are also expected to result in the center’s making more copies of entire databases and “data mining them” — using complex algorithms to search for patterns that could indicate a threat — than it currently does.

Intelligence officials Thursday said the new rules have been under development for about 18 months and grew out of reviews launched after the failure to connect the dots about Umar Farouk Abdulmutallab, the so-called underwear bomber, before his Dec. 25, 2009, attempt to bomb a Detroit-bound airliner.

After the failed attack, government agencies discovered they had intercepted communications by al-Qaida in the Arabian Peninsula and received a report from a U.S. Consulate in Nigeria that could have identified the attacker, if the information had been compiled ahead of time.

The changes are intended to allow analysts to more quickly identify terrorism suspects. But they also set off civil-liberties concerns among privacy advocates who invoked the “Total Information Awareness” program. That program, proposed early in the George W. Bush administration and partially shut down by Congress after an outcry, proposed fusing vast archives of electronic records — like travel records, credit card transactions, phone calls and more — and searching for patterns of a hidden terrorist cell.

But national security officials

stressed that analysts could already get the same information under the old rules, just in a more cumbersome way. They cited safeguards to protect against abuse, including audits of searches. The same rules apply to access by other federal agencies involved in counterterrorism.

“There is a genuine operational need to try to get us into a position where we can make the maximum use of the information the government already has to protect people,” said Robert S. Litt, the general counsel in the office of the Director of National Intelligence, which oversees the National Counterterrorism Center. “We have to manage to do that in a way that provides protection to people’s civil liberties and privacy. And I really think this has been a good-faith and reasonably successful effort to do that.”

The center has developed a priority list of databases it wants to copy entirely, but he and other officials declined to say which ones they were. (The Department of Homeland Security says it has already shared several entire databases, including records related to refugees, foreign students and international travelers.)

Obama campaign embraces Affordable Care Act

By Joe Garofoli
SAN FRANCISCO CHRONICLE

The Affordable Care Act doesn’t poll particularly well. On the campaign trail, saying “I’m going to end Obamacare” is an easy applause line for Republican presidential candidates. It ignites social conservatives like the Catholic bishop of Oakland, who will be protesting its contraception coverage provisions Friday in San Francisco.

None of that matters to President Obama’s re-election campaign. It is not backing away from the signature achievement of Obama’s first term, it is embracing it.

But despite generating a lot of passion among the most partisan voters on both sides of the issue, analysts say the health care law is not going to be a deal-breaker or deal-maker in the fall elections. Instead, both parties are using intense feelings about the new law as political kerosene to ignite excitement — and bring out votes — among their base supporters.

With the second anniversary of Obama signing the act into law to-

day and the Supreme Court preparing to hear a legal challenge to the law next week, Obama supporters are touting it as something that will help the president remain in the White House.

Democrats are in full-court-press mode to show how the law will help Americans, from holding a rally in Sacramento on Wednesday to sending glossy mailers tailored to female voters in swing states this week.

Obama supporters are confident because polling shows that while many Americans may loathe or be indifferent to the law in general, they’re supportive of many of its individual provisions.

A nationwide survey released this month from the nonpartisan Kaiser Family Foundation shows that 41 percent of voters hold favorable views of the law, 40 percent have unfavorable views and 19 percent don’t have an opinion.

But many of the law’s major provisions are popular. Voters generally like being able to keep their children on their health insurance until they are 26, or not being denied coverage because of a pre-existing condition.

Yet when pressed, many respondents are ignorant of the details of the law beyond the partisan sound bites.

Much of the visceral anger toward the health care law — nearly all of it coming from Republicans — is rooted in conservatives’ loathing of Washington.

The right views the health care law “as symbolic of big government and everything they hate,” said Drew Altman, president and CEO of the Kaiser Family Foundation, a health policy center based in Menlo Park that has done some of the most detailed analysis on the law and public attitudes toward its provisions.

Americans react most negatively to the law’s mandates that individuals and employers obtain health insurance or face penalties.

But many Americans still don’t even know what’s in the law.

The Kaiser survey found that six in 10 respondents “didn’t have enough information to understand how the law will impact them, and two-thirds say the law has not yet affected their family in either a positive or negative way,” according to the survey.

Republican-controlled House votes to kill a Medicare cost panel

WASHINGTON — In a rebuff to President Barack Obama, the Republican-controlled House passed a bill Thursday to abolish a Medicare cost control board created by the new health care law.

The bill, approved by a vote of 223-181, provoked a full-throated debate on the merits of the law, the Affordable Care Act, on the second anniversary of its signing by Obama.

In dozens of speeches, congressional supporters and opponents of the law previewed arguments that will be made next week when the Supreme Court hears a challenge to its constitutionality filed by 26 states.

The Obama administration, eager to showcase benefits of the law for consumers, said it had found that insurance rate increases affecting more than 42,000 people in nine states were unreasonable.

Kathleen Sebelius, the secretary of health and human services, reviewed the rates using authority provided by the new law. She said Thursday that insurers should rescind the increases, issue refunds to consumers or publicly explain their refusal to do so.

Insurers said the higher rates were justified by rising medical costs.

The stated purpose of the new panel, the Independent Payment Advisory Board, is to “reduce the per capita rate of growth in Medicare spending.” Spending cuts recommended by the 15-member board would take effect automatically unless Congress voted to block or change them.

—Robert Pear, *The New York Times*

In Oklahoma, Obama declares pipeline support

RIPLEY, Okla. — President Barack Obama stood in a red-dirt field before acres of stacked pipeline pieces Thursday to illustrate his support for expedited construction of the southern half of the controversial Keystone XL oil pipeline. But his public declaration of support for the project has pleased neither the industry and its Republican supporters nor environmentalists.

Obama’s appearance here near the oil town of Cushing, known in the industry as the nation’s pipeline crossroads, was intended to blunt months of criticism from Republicans in Congress and on the presidential campaign trail of his decision in January to reject for now construction of the pipeline’s northern leg from Alberta, in Canada, to Cushing. The attacks have gained resonance as gasoline prices have spiked, and congressional Republicans have sought to force action.

“Unfortunately, Congress decided they wanted their own timeline,” Obama told an invited audience of about 200 people. “We’ve told the company that we’re happy to review future permits. And today, we’re making this new pipeline from Cushing to the gulf a priority.”

—Jackie Calmes, *The New York Times*

US intelligence report warns of global water tensions

WASHINGTON — The U.S. intelligence community warned in a report released Thursday that problems with water could destabilize countries in North Africa, the Middle East and South Asia over the next decade.

Increasing demand and competition caused by the world’s rising population and scarcities created by climate change and poor management threaten to disrupt economies and increase regional tensions, the report concludes.

Prepared at the request of the State Department, the report is based on a classified National Intelligence Estimate completed in October that reflected an increasing focus on environmental and other factors that threaten security. An estimate reflects the consensus judgment of all intelligence agencies.

While the report concluded that wars over water are unlikely in the coming decade, it said that countries could use water as political and economic leverage over neighbors and that major facilities like dams and desalination plants could become targets of terrorist attacks. Coupled with poverty and other social factors, problems with water could even contribute to the political failure of weaker nations.

The public report, unlike the classified version, did not specify countries at greatest risk for water-related disruption but analyzed conditions on major river basins in regions with high potential for conflict — from the Jordan to the Tigris and Euphrates to the Brahmaputra in South Asia.

—Steven Lee Myers, *The New York Times*

Sergeant to be charged in Afghan killings

Staff Sgt. Robert Bales will be charged Friday with 17 counts of murder and various other charges, including attempted murder, in connection with the March 11 shooting deaths of Afghan civilians, a senior U.S. official said Thursday.

Bales, who is 38 and had been serving his fourth combat tour overseas, is expected to be charged in a military courtroom at Fort Leavenworth, Kan., where he is being held.

He is accused of walking away from his remote base in southern Afghanistan and killing 16 civilians in a nighttime attack. The Army has not suggested a motive publicly.

A lawyer for the soldier, John Henry Browne, said this week that Bales did not remember some events at the time of the shooting. Brown has also said that the sergeant’s behavior could be affected by post-traumatic stress disorder or from a concussion he suffered during a vehicle rollover in Iraq. Browne was not present at the hearing Thursday, but the sergeant was represented by an assistant to Browne, Emma Scanlan, and a military defense lawyer.

The shooting, most likely the deadliest war crime by a single U.S. soldier in the decade of war that has followed the terrorist attacks of Sept. 11, 2001, has further frayed the relationship between the U.S. and Afghan governments. Earlier this year U.S. military personnel burned Qurans at an Afghan base, an act that prompted public protests and a series of killings.

—William Yardley, *The New York Times*

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Cutting the program also hurts the Institute more directly. Students who have not completed their degrees will be forced to finish on a rushed schedule, and those who are only partway done with their projects will have to seek funding elsewhere. And because MIT is one of the top producers of PhDs in nuclear fusion in the United States, terminating C-Mod is a blow not only to

If you agree that C-Mod deserves funding, how can you help? Massachusetts politicians have already gotten on-board with an effort to save ITER, but bribery to save C-Mod from MIT and the Commonwealth may not be enough. Make an argument to your home House representative and Senator as to why C-Mod helps not just MIT, but the U.S. as a whole — by funding domestic fusion research, we position ourselves to take advantage of a promising and clean energy solution. And the government knows well that it can trust MIT to put its money to good use.



GUEST COLUMN

The myths about plyometrics

Understanding the entire picture

By Wuquiong Fan

Allison Hamilos posted an article about plyometrics on March 20, 2012. Although she gave the right reasons for doing plyometrics, what she considered plyometrics is quite inaccurate and would not improve your goals of explosive strength. What she described can be usable in its own right as a fat-loss and general conditioning workout, but it is not true that it would help you jump higher or run faster (assuming that you are already a decent athlete). Her safety advice is sound, other than the use of “athletic shoes.”

When doing plyometrics, you should be barefoot or wear shoes with very thin soles (Vibram FiveFingers, Converse Chuck Taylor, Saucony Kinvara, Nike Free, etc). A main muscle group you train in plyometrics is your foot, so if you cover it up too much with modern “athletic” footwear, you are not going to get the results you want. Also, since you want to really focus on landing at your mid-foot and getting off the floor as fast as possible, the cushions in most shoes would only slow you down and reinforce improper motor patterns. Basically, plyometrics work primarily through stiffening your feet and ankles, allowing you to pop up off the floor in less time, decreasing the amount of kinetic energy you transfer into the floor rather than propelling you up. In general, just be careful when you land and don’t act a fool. Using “athletic shoes” breeds improper form, carelessness, and they really don’t absorb enough energy to save your joints from a bad fall. Please consult a doctor before beginning plyometrics or if you run into painful issues.

Myth #1: Speed is not dependent on strength

Although this may seem like a strange introduction to plyometrics, it is fundamental to understand the relationship between speed and strength to understand what plyometrics is. Strength is the amount of work you can do without time constraint. Speed is power: how fast you can apply your strength.

Let's assume that all three athletes are the same height and weight:

	Max force of half squat without time constraint (2 seconds)	Max force applied out of a vertical jump (0.2 seconds)	Reactivity ratio	Strength ranking	Speed ranking	Reactivity ranking
Athlete A	250 lbs	200 lbs	80%	3	2	1
Athlete B	500 lbs	190 lbs	38%	1	3	3
Athlete C	500 lbs	400 lbs	80%	1	1	1

In this case, Athletes A and C are equally reactive, but Athlete C is much faster and stronger. Athlete B is very unreactive, but because he is so strong, he is barely slower than Athlete A. Plyometric training can improve the reactivity ratio, but it cannot increase strength. Since Athletes A and C are already at a very high reactivity ratio, plyometrics would be ineffective for them. Instead, they should focus on gaining strength if they want to get any faster. Athlete B, on the other hand, should get on a plyometrics program to improve his reactivity ratio.

If your strength level is low, you should not care about reactivity ratio and just focus on getting stronger. The average inactive person actually has a higher type II-b fast-twitch muscle fiber ratio than the average athlete in a sport that involves endurance. Reactivity is also much more difficult to improve than strength. Also, without developed muscles, chance of joint injury is high. After a few months of a pure strength training program with no jumping, I was able to get from a standing vertical of 23 inches to 27 inches, even though I probably lost reactivity. After a month of reactive training to take advantage of my new found strength, I was able to get to 30+ inches. For reference, the average NBA player's vertical is only 28 inches.

Myth #2: Plyometrics workouts should be exhausting

The purpose of plyometrics is to improve pure speed and explosiveness, so any program with an endurance component does not develop plyometric ability. Immediately available ATP can only last about three seconds. After that you are switched to the phosphagen system, which might last you another 15 seconds if you are focused and took creatine. After that, anaerobic exercise cannot continue and you will end up using mostly type I slow-twitch muscle fibers. A set that lasts 30 seconds with only a minute of rest would not provide any benefits to speed.

Instead, you should do plyometrics sparingly, but highly focused. A program for increasing vertical jump would look something like this:

1. Dynamic warmup with focus on shoulder and hip mobility
2. Depth jumps: three sets of four reps. Take your time between each rep and rest at least two minutes between each set. You should be extremely concentrated on each rep and explode as fast off the ground as you can. The sets might be mentally exhausting, but should not feel physically tiring at all.
3. Jump squats: three sets of six reps. Use 25 percent of your squat max. You should explode up immediately after each rep. Rest at least two minutes in between.
4. Squats: Warmup from bar, add-

ing weight each set up until working sets. Four working sets of six reps at 70 percent of max. Rest at least three minutes in between.

5. Half Squats: three sets of eight reps. Use the same weight and rest time as squats.
6. Leg curls: three sets of 10 reps.
7. Back extensions: four sets of 12 reps.

If you wish to learn more about plyometrics, I encourage you to read *The Vertical Jump Development Bible* by Kelly Baggett.

RESPONSE

Plyometrics for newbies

These exercises are just an introduction

By Allison Hamilos
STAFF COLUMNIST

First off, a big thanks to Wuqiong for joining the discussion on athletic training! One of Fresh Start's goals is to get people on campus sharing ideas about fitness and finding ways to make time for healthy endeavors. He has excellent points for athletes looking to improve vertical leap, and it's a very nice supplement to what we posted on Tuesday. I strongly encourage others to share their experiences and tips either to *The Tech* opinion section, online comments, and/or by emailing freshstart@tech.mit.edu so that your ideas will show up in print!

However, it is important to emphasize that the workouts Fresh Start provides are not intended as customized, elite athlete performance training regimens. Although such articles would definitely have merit, Fresh Start subject matter is selected based on the following criteria:

1. Most *Tech* readers are not elite athletes. We have a broad readership!
2. Generalized workout plans are the best starting blocks for a broad target audience.
3. Elite performance training requires customization and supervision, hence—
4. Fresh Start only presents safe regimens possible to do with minimal experience, instruction and supervision.

Although there are some incredible athletes on campus, and we definitely want to include them in the discussion, Fresh Start aims to serve a spectrum of readers at many different points in their athletic journeys. We assume that everyone will read our articles, but that only those who have never tried one of the regimens suggested or are out of practice will implement it verbatim. It goes without saying that elite athletes are already following more intense regimens that are customized to their personal athletic goals. We hope that elite athletes might be inspired to try some of the ideas if they don't already do these workouts, and that they will bring them up with their coaches and trainers. Their trainers can then incorporate them in an optimal routine for the athlete's personal goals.

For instance, Wuqiong points out that the plyometrics circuit presented in Tuesday's issue will not endow you with an NBA-worthy vertical leap. He is absolutely right about this: the circuit presented has been designed to be a general, widely implementable routine that is more or less equal parts cardio, quickness, and strength training. Such a program is ideal for the newbie plyometrics enthusiast because risk of injury is low, it teaches technique, it includes both cardio and strength elements, and it can be a high intensity workout in its own right. While our cardio emphasis may deviate from "pure" plyometrics (which by definition are explosiveness-based only), the drills themselves are

still plyometrics; about that there can be no debate. How you choose to rest in between sets will determine whether you're training explosiveness, endurance, or both.

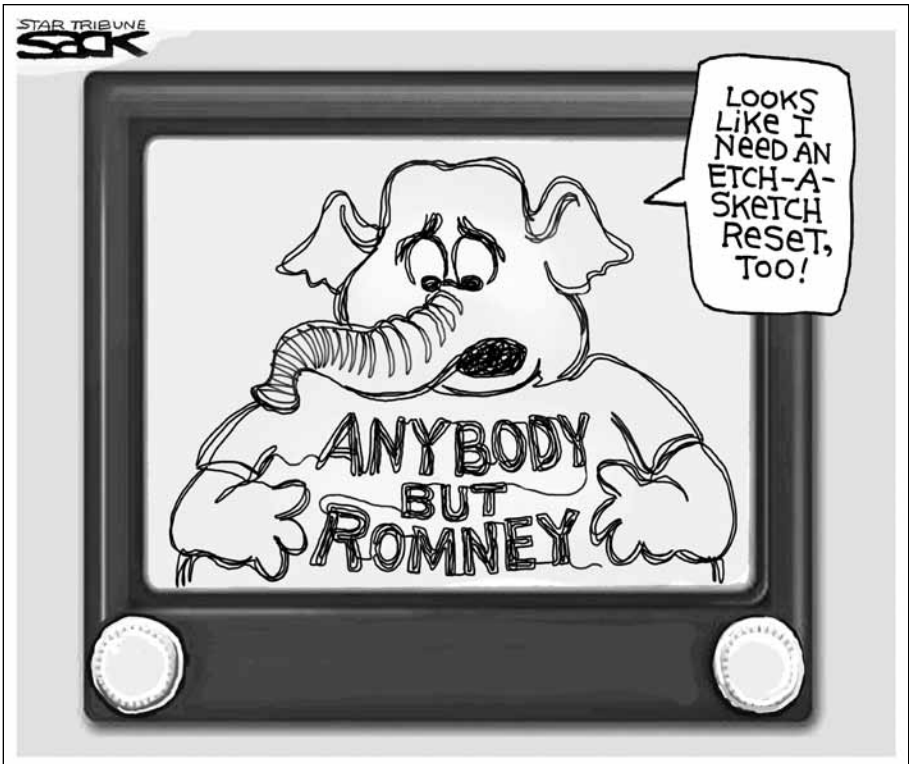
For a program further tailored to explosive movement (such as one for volleyball or lacrosse players), you could incorporate sport-specific plyometrics in shorter, more intense drills with much longer rest periods, as Wuqiong suggests. In addition to these drills, you should have a strength coach-directed weight regimen focusing on explosive lifts like cleans, snatches, deadlifts, squats, split-squats, hamstring curls, calf raises, etc. Because this level of customization would be risky or at least suboptimal for someone to attempt without coaching, Fresh Start leaves these programs to strength trainers to teach you one-on-one.

The circuit presented has been designed to be a general, widely implementable routine.

Finally, the “barefoot hypothesis”: The idea that wearing shoes inhibits athletic improvement, is based on the assumption that humans were evolved to walk barefoot, but have been lulled into weakness and bad habits by shoes. Wuqiong mentions this, but does not address that most of our bodies have adapted to wearing shoes since childhood and are not ready to “jump in” to barefoot training, whether this hypothesis is true or not. When Fresh Start warns to wear shoes, we interject this for the sake of the novice who is at greater risk of injury with no protective footwear than with shoes.

Wuqiong further asserts, "Using 'athletic shoes' breeds improper form, carelessness, and they really don't absorb enough energy to save your joints from a bad fall." He is correct that athletic shoes will not protect your joints if you consistently land like a rhinoceros, but the claim about engendering improper form and carelessness is a generalization. Whether you wear shoes or not, maintaining proper form requires concerted effort. It is certainly possible to train with perfect form with your shoes strapped on.

It is true that many experienced athletes train barefoot in order to train foot muscles because they have (hopefully) weaned themselves off wearing shoes. Therefore, for your safety, Fresh Start urges you to wear athletic footwear during plyometrics and to seek professional guidance in transitioning if you decide to do so. The barefoot strategy is not a mainstream idea accepted by trainers and doctors. It is not necessarily wrong nor will it not someday be proven correct, but it does mean you should research it to convince yourself it is right before trying it.



DO YOU MAYBE THINK YOUR COFFEE DRINKING IS GETTING IN THE WAY OF YOUR SLEEP?

SNAP

SSS

ZZZ

ZZZ

WORK

WORK

WORK

COFFEE

WORK

WORK

COFFEE

ON THE CONTRARY, MY SLEEP GETS IN THE WAY OF MY COFFEE DRINKING.

Solution, page 10

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Solution, page 10

2x		24+			3
270x				2-	
	2-	2		2-	
		3-			30x
200x			3+	2	
	3			10+	

Solution, page 10

1 Construction-site machine
6 Yale athletes
10 Places for pampering
14 Omega alternative
15 Globetrotter's purchase
16 "One-L lama" poet
17 In between, quaintly
18 Solemn assent
19 "___ way to go!"
20 Book intended for
bookstores
23 Put another way
26 Chaperon
27 Stake a stand against
28 "Like, that's obvious!"
30 Wet tar, for instance
31 Architect Pei's first name
33 They mean nothing
37 Pupil from abroad
41 Little shavers
42 Be visibly elated
43 Baton Rouge sch.
44 Take ___ (decline to

46 Noticed
49 Lively wit
52 Opts for
53 Versatile batter
56 Author Morrison
57 Take the train
58 Old Testament patriarch
62 Art Deco artist
63 Pilot's "Back to you"
64 Impolite request
65 Bring up
66 Gradually remove
67 Is compelled

- 1 Flatscreen ancestor
- 2 Word on a theater ticket
- 3 Common Arab given name
- 4 Right beside
- 5 Optional equipment
- 6 Duck and dodge
- 7 Bar garnish
- 8 "Aha!"

- 9 Prepared for painting, perhaps
- 10 Seized suddenly
- 11 Outdoor dining spot
- 12 New York Public Library benefactor
- 13 Definitely will not
- 21 Ordered out
- 22 Japanese automaker
- 23 Physician/synonymist
- 24 Strong adhesive
- 25 Star Trek character
- 28 Christmas carols
- 29 Extremely
- 32 Metaphorical basket contents
- 34 Ancient artifact
- 35 First stage
- 36 Wall supports
- 38 More vigorous
- 39 Savory jelly
- 40 Twitter message
- 45 Each
- 47 Santa's transport

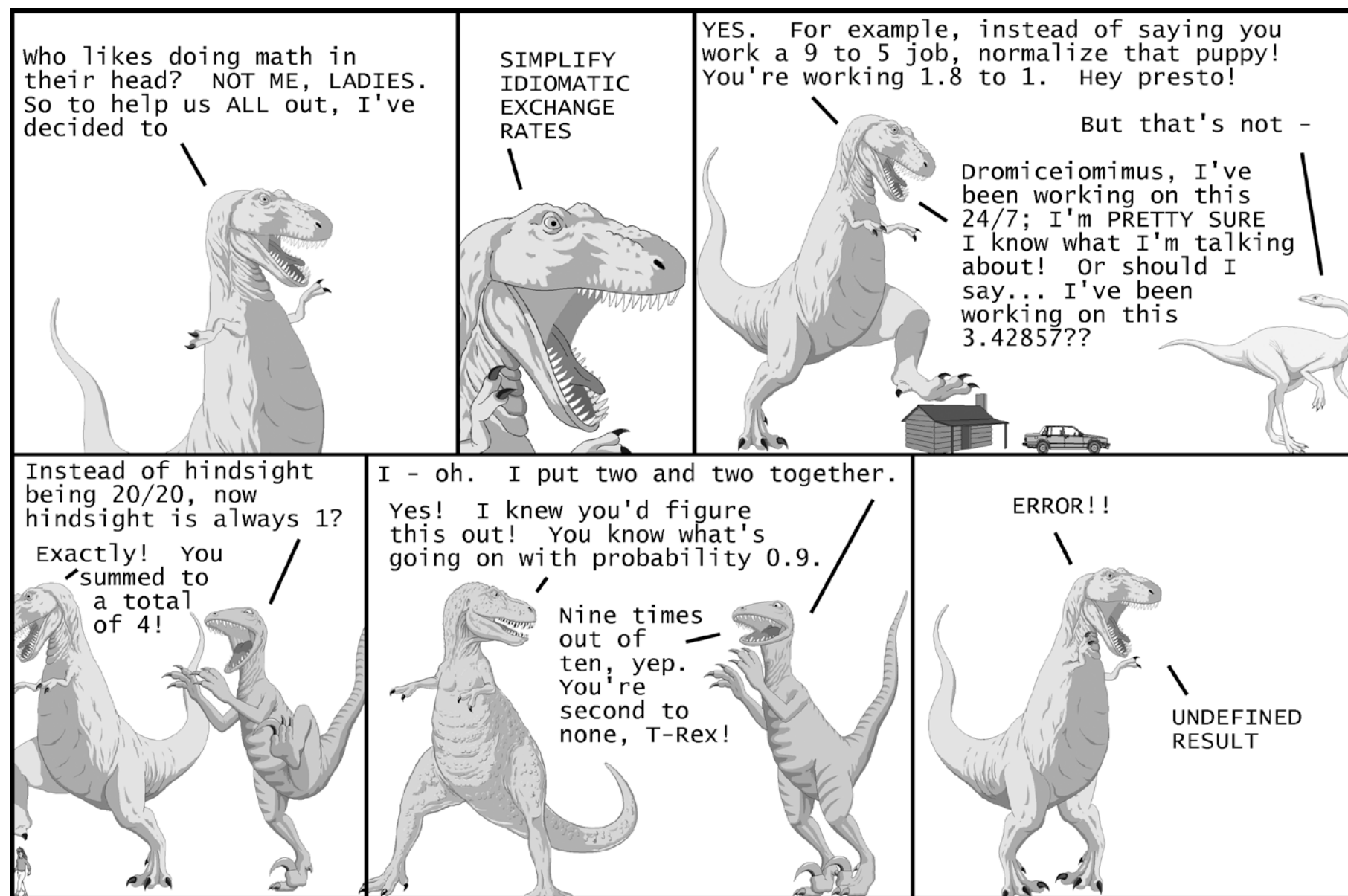
48 Athens' foe at Marathon
49 Perfumery ingredient
50 Took an oath
51 Ship of 1492
52 Not at all lenient

54 Hub of activity
55 Bit of creativity
59 Early hrs.
60 Qty.
61 Corp. bigshot

DINOSAUR COMICS

[2168]

by Ryan North



by Jorge Cham



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Sudoku II

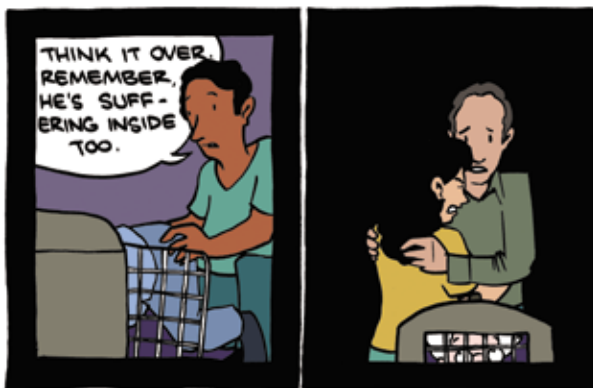
Solution, page 13

	7	1	6	2			4	5
				8	5			2
			7					
		7				9	6	
		9	4		3	8		
	5	8				2		
					7			
7			3	1				
3	8			9	2	4	1	

Techdoku II

Solution, page 13

15x	1-		24+			8x
		4-		4-		3
8	2-		24x		168x	
6		8x			280x	5
112x				2		60x
	11+		1-			3÷
14x			23+		8	
	3-				112x	



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MOVIE REVIEW

Brains and brawn team up to form an unlikely (and hilarious) duo

Jonah Hill and Channing Tatum return to high school in *21 Jump Street*



Jonah Hill and Channing Tatum play a motley pair of rookie cops in *21 Jump Street*.

PHOTO BY SCOTT GARFIELD, © 2012 COLUMBIA TRISTAR MARKETING GROUP, INC.

By Jared Katz

In this loose adaptation of the 1980s TV show *21 Jump Street*, high school enemies turned best buds, Morton Schmidt (Jonah Hill) and Greg Jenko (Channing Tatum) are a motley pair of rookie cops who find themselves transferred to the Jump Street unit, a revived undercover police program from the '80s. In an attempt to find a drug supplier at Sagan High, Jenko and Schmidt pose as students and find themselves awkwardly navigating the social waters of high school once again. Fortified by his glory days as ruthless bully and super-star jock, Jenko confidently approaches the high-school scene while Schmidt anxiously an-

ticipates a repeat of his teenage misery. This time around, however, Schmidt fits in with the new-age popular crowd, while Jenko's antiquated notion of "cool" quickly undercuts his chances of moving up Sagan High's social ladder. While Hill delivers all the laughs we've come to expect from the Oscar nominee (albeit in a slimmer package), Tatum steals the show in his break-out comedic performance. Jenko's rapid transformation from ruthless bully to lovable loser leaves him ironically gravitating towards the nerds of Sagan High. I'll spare the details of Jenko's exploits with his new group of friends, but suffice it to say that some of the movies finest moments involve Tatum acting like a total dork.

Although the jokes sustain rapid-fire delivery from beginning to end, the narrative takes some time to reach a comfortable pace. The first half of the film felt like an extended version of the trailer; the unusually brief scenes don't allow for any serious character development, and if you blink, you might find yourself wondering how Jenko and Schmidt transition from enemies to allies. Thankfully, the director pumps the brakes about halfway through the movie where the narrative reaches a slower and sustainable tempo. If you're looking for some low-brow laughs topped off with an uncomfortable reminder that sometimes life can be just like high school, check out *21 Jump Street*.

★★★★☆

21 Jump Street

Directed by Phil Lord and Chris Miller

Starring Jonah Hill, Channing Tatum, and Ice Cube

Rated R

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CHRISTOPHER A. MAYNOR—THE TECH
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Solution to Sudoku
from page 6

7	8	5	4	3	9	2	1	6
6	3	2	5	7	1	8	4	9
4	1	9	6	2	8	3	7	5
1	9	6	7	8	3	5	2	4
8	5	7	2	9	4	6	3	1
2	4	3	1	5	6	9	8	7
9	2	4	8	1	5	7	6	3
3	6	8	9	4	7	1	5	2
5	7	1	3	6	2	4	9	8

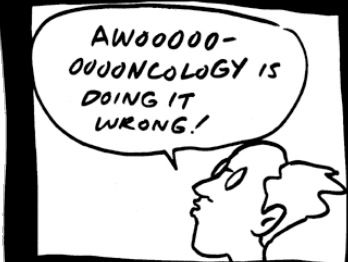
Solution to Techdoku
from page 6

1	2	4	6	5	3
6	1	3	5	4	2
5	6	2	4	3	1
3	4	6	2	1	5
4	5	1	3	2	6
2	3	5	1	6	4

Solution to Crossword
from page 6

CRANE	ELIS	SPAS
ROLEX	VISA	NASH
TWIXT	AMEN	ATTA
TRADE	EDITION	
RESTATE	ESCORT	
OPPOSE	NODUH	
GOO	IEOH	ZEROS
EXCHANGE	STUDENT	
TYKES	GLOW	LSU
APASS	ESPIED	
ESPRIT	SELECTS	
SWITCH	HITTER	
TONI	RIDE	ISAAC
ERTE	OVER	GIMME
REAR	WEAN	HASTO

SMBC, from Page 8



Mild winter raises threat of forest fire

Next few months will be the most risky forest fire season in memory

By David Abel
THE BOSTON GLOBE

Extraordinarily dry conditions from the lack of snowfall — combined with all the fallen tree limbs from last year’s triple whammy of tornadoes, Tropical Storm Irene, and the Halloween-eve snowstorm — will make the next few months the most dangerous forest fire season in memory in Massachusetts, state officials warn.

The 3 million acres of forests are the equivalent of a tinderbox, and there have already been more than 70 brush fires, significantly more than David Celino, the state fire warden, can remember at this time of year.

When the first fires of the year began sweeping through woodlands near Worcester in January, he thought it was odd, because brush fires are rare in the depths of winter.

But blazes kept cropping up in copses, enough that Celino did something he had not done in 26 years of fighting fires for the state: He had to dewaterize trucks and other equipment that had been stowed away for the season.

“This has been really unusual,” said Celino, who oversees fire-fighting for the state Department of Conservation and Recreation. “Last year, at this time, we had all but zero fires until April. The reason for this is simple: We just didn’t have winter.”

Fire officials’ concerns have

peaked this week, as temperatures rise into the 80s throughout the state, far surpassing records. This winter ranked as the second warmest ever recorded in Massachusetts, with the temperature between December and February averaging 33.6 degrees, more than five degrees above normal, according to the Northeast Regional Climate Center in Ithaca, N.Y. The warmest winter on record in the past 117 years was in 2002.

“What we’re seeing now has the potential to make the perfect storm,” said state Fire Marshal Stephen D. Coan, who also could not recall a fire season starting so early. “There are all the elements: the lack of a solid snowpack, all the debris from the natural disasters, and the historic high temperatures.”

He now worries about strong winds and people flocking to the forests to enjoy the weather, setting campfires, rather than cross-country skiing or snowshoeing.

“All it takes is a spark from a dirt bike or a campfire,” Coan said, adding that the risk will remain particularly high until trees bloom and leaves add moisture. “We need to remind people, especially this time of year, that they be very careful in the woodlands, that they have to properly extinguish fires, and that they have a permit for a campfire.”

He and others have also raised concerns about the hundreds of thousands of dead trees and limbs that have dried out on forest floors.

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Photo: “Eight Steps”, project by 2011 Third Prize Winner, Hannah Perner-Wilson MIT Media Lab Grad Student

Coop Student Board of Directors Election Update

The following student Coop members have been nominated by the Stockholders as candidates for the Board of Directors for the 2012-2013 academic year.

MIT Undergraduate Students:
Joshua Dunaway, 2014
Paige Finklestein, 2014
Emma Kane, 2015

MIT Graduate Students:
Ellie Bertani, MBA, Sloan/MPA, HKS, 2013
Samuel Shaner, PhD, 2015

Harvard Undergraduate Students:
Cody Dean, 2014
Hilary Higgins, 2015
Joshua Zhang, 2014

Harvard Graduate Students:
Christina Adams, MBA, 2013
Oliver Hauser, PhD, 2015
Mathew Morgan, MPP, 2013
May Lam, MBS, 2013
Allison Trzop, JD, 2013

Any student Coop member may petition to be a candidate on the election ballot. A Petition application is available online at www.thecoop.com.

The Petition period is March 14 to April 1, 2012. For complete Petition rules consult the information posted in the election section on the Coop website at: www.thecoop.com.



www.thecoop.com

Anderson's death caused by overdose

Anderson, from Page 1

to an enlarged heart, Kubiczek said. Rather, an enlarged heart can result from any number of unrelated medical conditions, such as high blood pressure or congenital illnesses.

Cardiac infections that commonly result from short-term intravenous drug abuse would be noted differently on the death certificate, he added.

Kubiczek said that the manner of death as "accident" is determined by police and other investigations, as well as from autopsy information.

The wrestling team does not test for drugs, according to team captain Samuel W. Shames '14. All varsity sports at MIT must abide by NCAA rules, which state that students should be ready for a drug test at any time. Wrestling, how-

ever, is a club sport and does not have the same rules.

The City of Cambridge Clerk's office confirmed the cause of death and listed the date of the determination as March 14, 2012.

Cambridge had an average of one opiate-related death per year in the 15-24 age group between 2004 and 2006, according to the latest data available.

The Cambridge police could not release additional information; MIT Police could not release information on the status of their investigation, and the MIT News Office declined to comment. Both MIT entities are waiting for a copy of the death certificate.

Members of the community who feel affected by Anderson's death are encouraged to contact Mental Health Services at 617-253-2916, or talk to their housemasters or GRTs.

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Hello, Athletes, look at the sports page, now back to you, now back to the sports page, now back to you. Sadly, your sport isn't there, but if you started writing for *The Tech*, it could be. Look down, back up, where are you? You're on the front page. Anything is possible when you write for *The Tech*.

sports@tech.mit.edu

THE COUNCIL FOR THE ARTS AT MIT GRANTS PROGRAM

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**NEXT DEADLINE
MARCH 30, 2012**

arts.mit.edu/about/camit/camit-grants/
For more info, contact cohen@media.mit.edu

Libraries, from Page 1

“Borrow Direct” in their description, and can be reserved from any library in which they are available. The items take about three to five business days to arrive and users can request to pick up the book at any MIT library. Borrow Direct items are loaned for 30 days, can be renewed once, and are subject to recall at the lending library’s discretion, said the MIT Libraries website.

MIT Libraries is eager to get members of the MIT community to use this service, which was activated earlier this week. “The service has been up and running, but we’re just trying to get the word out,” said Heather Denny, communications officer for MIT Libraries.

As with every system, the Borrow Direct interface is not perfect. According to the WorldCat website, limitations include: title searches in WorldCat not returning results when there are books available, even when a second search in the Borrow Direct interface would be successful; some books may appear “available” but not be “requestable” if the specific library does not participate in Borrow Direct (though the book can be requested through the Interlibrary borrowing); and the system does not recognize when an item is part of a multivolume collection, so a note has to be added to the checkout request to specify which volumes are wanted.

The service has been getting positive feedback from MIT affiliates, said Melissa Feiden, annex services and user experience librarian, adding that some people were excited about it before it was even live. “People were aware that we joined the service before it was up and running, and people would come to the service desk asking about the program.”

Borrow Direct expands upon existing collaborations that MIT Libraries participates in, such as the Boston Library Consortium (BLC) that gives MIT on-site access to over a dozen libraries in the Boston area, including the Harvard library system. Additionally, the Interlibrary Borrowing program is similar to Borrow Direct, but shipping is not expedited and materials cannot be borrowed that are “unrelated to your department, lab, or center,” according to MIT Libraries.

More information can be found at <http://libraries.mit.edu/ordering/non-mit-access/borrowdirect.html>.

—Bruno B. F. Faviero

Alzheimer’s drug approved

Drug dosage was increased despite the side effects

By Katie Thomas
THE NEW YORK TIMES

Four months before a best-selling Alzheimer’s drug was set to lose its patent protection, its makers received approval for a higher dosage that extended their exclusive right to sell the drug. But the higher dosage caused potentially dangerous side effects and worked only slightly better than the existing drugs, according to an article published Thursday in the British Medical Journal.

The drug, Aricept 23, was approved in July 2010 against the advice of reviewers at the Food and Drug Administration.

They noted that the clinical trial had failed to show that the higher dosage — 23 milligrams versus the previous dosages of five and 10 milligrams — met its goals of improving both cognitive and overall functioning in people with moderate to severe Alzheimer’s disease.

The single clinical trial of 1,400 patients also found that the larger dosage led to substantially more nausea and vomiting, potentially dangerous side effects for elderly patients. The drug was developed

Applying for a new dosage is a relatively new tactic and — in the case of Aricept 23 — a dangerous one.

by the Japanese company Eisai but is marketed in the United States with Pfizer.

“It doesn’t really have much benefit but does substantially more harm,” said Dr. Steven Woloshin, one of the co-authors of the journal article and a professor of medicine at the Dartmouth Institute for Health Policy and Clinical

Practice. Aricept generated more than \$2 billion in annual sales since its first approval in 1996, according to the journal article, but it was set to lose its patent protection in November 2010, opening the door to cheaper generic versions.

In 2009, Eisai applied for a 23-milligram version of Aricept, a dosage that, the journal authors note, cannot be reached by combining the 5- and 10-milligram dosages, which are available in generic form.

Drugmakers often try to fend off competition from generic makers by finding ways of extending their exclusive rights to sell a drug — by altering its chemistry slightly, for example, or by offering it in extended-release versions. Applying for a new dosage is a relatively new tactic and — in the case of Aricept 23 — a dangerous one, said Dr. Sidney M. Wolfe, director of Public Citizen’s Health Research Group.



Passover @ MIT

Passover First Seder is Friday night, April 6
Passover Second Seder is Saturday night, April 7

First Seder options through MIT Hillel:

- Kosher Seder at Hillel
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- Home Hospitality (hosted by local alumni and faculty)

Second Seder options around campus:

- Undergraduate Seder at AEPi (please RSVP by March 21)
- Grad Hillel Seder

Kosher for Passover Meals through MIT Dining/Bon Appetit

- Offered for MIT community members all eight days

To register for seders and/or meals, go to hillel.mit.edu, “Sign Up for Passover Seders and Meals” on the top right, or use the QR-code above. Pre-registration required.

ALL SIGN-UPS *MUST* BE COMPLETED BY FRIDAY, MARCH 30!

Questions? Email passover@mit.edu

Hag Sameach / Happy Passover!!
Next year may we all be free!



This space donated by The Tech

Solution to Sudoku II

from page 7

8	7	1	6	2	9	3	4	5
6	4	3	1	8	5	7	9	2
9	2	5	7	3	4	1	8	6
1	3	7	2	5	8	9	6	4
2	6	9	4	7	3	8	5	1
4	5	8	9	6	1	2	7	3
5	1	2	8	4	7	6	3	9
7	9	4	3	1	6	5	2	8
3	8	6	5	9	2	4	1	7

Solution to Techdoku II

from page 7

3	8	5	7	6	4	1	2
5	2	7	1	8	6	3	4
8	5	2	4	3	1	6	7
6	3	8	2	1	7	4	5
7	4	1	3	2	8	5	6
4	1	6	8	7	5	2	3
2	7	4	6	5	3	8	1
1	6	3	5	4	2	7	8

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COD, from Page 1

view was due for the student discipline process, in part because of changes to federal regulations. While most changes would likely be small wording changes, Redwine brought up the potential for “more significant changes” that would require faculty approval to go through.

Redwine also noted that the

dean of Harvard College had asked for his opinion on having students on the committee, something that MIT does and Harvard does not. Redwine said that the student membership on the committee was incredibly valuable. "Apparently Harvard worries about confidentiality," he said. "In my experience we have never ever had an issue with that. We had worried more about some of the faculty."

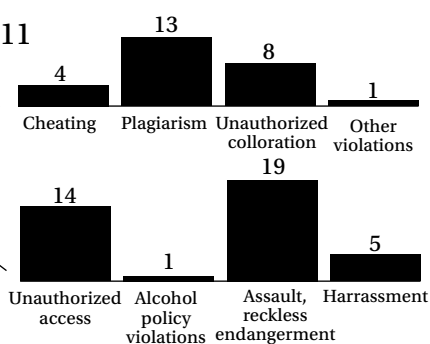
2009-2010 → 2010-2011

Total hearings: 12 \rightarrow 5

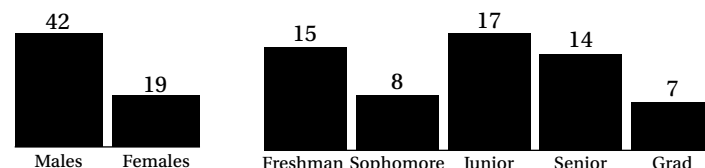
Academic misconduct: 22 \rightarrow 26

Personal misconduct: 48 \rightarrow 67

Students sanctioned: 27 → 27



2010-2011
61 reported
incidents



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Entrepreneurial spirit captures minds of engineers

Founding a startup proves to be a rewarding and eye-opening experience for many students

Startups, from Page 1

'11, a Course 6-3 alum who now works at Dropbox, founded Lingt, a language learning software startup his senior year. Lingt was backed by Y Combinator (YC), a seed-stage startup funding firm, in 2009 and sold to Dictionary.com a year later. A light version of the product, Lingt Classroom, which allows students to easily record themselves speaking and send the files to their teachers, still exists and is used in the Chinese department at MIT.

"First semester senior year, we were like, 'Let's do a startup!' We decided to focus on foreign language education, since it was

that would help him study for a French test. He has been working on Quizlet ever since.

"It almost wasn't even a choice — Quizlet was growing and succeeding, with six million users per month, and it needed a lot of attention. Last semester, [Spring 2011], I was trying to do two things — school and Quizlet, and I wasn't doing the best at school. ... I think the chances of succeeding are much higher when you focus on one thing and do it really well, so I decided to go full-time."

During his time at the Institute, Sutherland found inspiration in his living group, as well as the general atmosphere of MIT. "Everyone here is really interesting and

higher chance of success later on," says Wheeler.

Indeed, Wheeler believes the group project environment is extremely similar to working at a startup. "It's like working on a big group project with people that you like and respect."

Other ways to get into the startup mentality can be more psychological. Kevin Rustagi '11 and Gihan Amarasiwardena '11, founders of Ministry of Supply, a company that makes high-performance business apparel for men, say that in addition to technical skills, having the right attitude is key.

"It's important not to let pride get in the way — be willing to admit you don't know everything, and that you can't do it alone. It's not an ego thing to do it on your own, and it's not bad to network and connect with other people," said Rustagi.

Rustagi also encourages those who are considering startups but might be risk averse to explore startups anyway.

"Sometimes, the humble thing goes too far — people at MIT don't realize that being at MIT mitigates the hell out of the risk you take. Lots of people say, 'Oh, if I get into this program, then I'll do it,' but lots of projects that don't win, say the 100K, go on to become extremely successful. The worst possible thing is to say, 'I didn't get into YC, so I'm not going to work on my idea.' MIT students have great ideas — if you have an idea, just build a prototype and see if it works! If you care about it, make things happen."

Rustagi and Amarasiwardena also believe that startups and class

of support they've gotten is "incredible," and that coming out of college, "the expectations of the lifestyle are minimal."

"We don't have significant obligations. We fly coach, we take the bus, that's all fine. Have faith! If you try something and fail, you'll be better for it."

Resources at MIT

In the past several years, MIT has seen many new initiatives aimed to foster entrepreneurship at the Institute. Some, like the expansion of the Martin Trust Center for MIT Entrepreneurship (E-Center) have been led and backed by the Sloan School, but many have been organized by students themselves.

'We don't have significant obligations. We fly coach, we take the bus, that's all fine. Have faith! If you try something and fail, you'll be better for it.'

Startup Bootcamp is one such example. The annual event, in its third year, is a one day marathon of short talks from well-known startup founders in the high-tech startup community, held in Kresge Auditorium. This year, the event drew hundreds of people from the MIT and Boston communities.

Michael Grinich '11, who created the event while he was an undergrad, said that during his time



start their own companies and find jobs at startups. This IAP, StartLabs hosted a four-week incubator called "Concept to Company" (C2C) which matched various teams with startup mentors to help launch a company. StartLabs also organized a career fair dedicated exclusively to startups earlier this month, which was attended by over 40 companies. Minna G. Song '14, who attended the career fair, said she enjoyed the startup focus. "It was really cool to see so many local startups and the vibrant tech scene right here in the Boston area."

William Aulet, Managing Director of the E-Center, encourages all students interested in entrepreneurship to talk to him and the E-Center if they are seeking advice for their startups. "A lot of students might not know we're here, but we can help you refine your idea and offer you advice and resources. There's the Venture Mentoring Service, the 100k Entrepreneurial Competition, the IDEAS Competition, etc. We can point you to a lot of opportunities."

In fact, MIT's Venture Mentoring Service (VMS) is one of MIT's best kept secrets. The program, launched in 2000, matches MIT students, alumni, faculty, and staff with mentors who help them with all aspects of their startups. The service is completely free, and does not ask for an equity stake in any of the companies. Rustagi said that his company benefitted tremendously from VMS. "There were tons of mentors to help us, and they really helped us showcase our startup."

In the end, startups at MIT are intense, time consuming, and extremely rewarding. Vinnie Ramesh '12, a senior in Course 6-3 who co-founded Wellframe, a health data science startup, says he likes the startup environment because "you get to move extremely quickly, and you get more responsibility at a startup." Wellframe's product helps users estimate their risk of diabetes and other diseases based on information like age, weight and other biometric data. Last year, the startup became a semi-finalist in the Data Design Diabetes competition, and received \$20,000 in funding.

"I really enjoy the opportunity to work on hard problems that I'm interested in, and I get to play a lot of different roles, like technical, marketing, sales, etc." "Mostly you sacrifice sleep," he added. "But I think that's normal — at MIT, if you have to stay up all night to get something done or learn something new, you will. ... MIT is good training for working hard."

Ramesh is undaunted by the lack of guarantees inherent in working on a startup. "If I fail, I'm probably going to try again and start another company," he laughs. "But I think if you have an idea, and it solves a problem, that's really valuable. And if it doesn't work, you've still learned a lot, and you'll come out a stronger person."



relevant to us at the time, and we thought we could use technology to make it better. My co-founder Justin Cannon '08 and I were taking Chinese at the time, and we thought there was very little speaking practice. In class, people just kind of droned over each other, and we wanted to address that. We spent IAP working on it and ended up making Lingt."

Varenhorst says he found the experience simultaneously exhilarating and challenging. "I remember our servers crashing when TechCrunch ran an article about us. I was driving through the Hoover Dam with my brother and watching the mail server crash, trying to fix it — it was kinda crazy."

Varenhorst also fondly remembers his fingers going numb from coding in the wintertime. "My co-founder Justin Cannon lived in Beta, so I'd go work at Beta every-day and code away. The windows didn't really trap heat, so my fingers would be really cold, and I'd turn the hot water on to warm them up. Coding with fingerless gloves really builds character," he laughs.

Yet, like with all commitments, sacrifices had to be made. The startup became increasingly time-consuming, and Varenhorst had to pare down his commitments to make time for Lingt. "In second semester senior year, I had to give up on classes I wanted to take — I took a light load so I could work half-time on my startup, and I missed CPW for Y Combinator."

Indeed, the conflict between balancing one's startup and keeping up with schoolwork is a common theme among many founders, who often find that as their startup grows, they must make the difficult decision to choose one or the other.

Sutherland, Chief Technical Officer and founder of Quizlet, decided to take a leave of absence his senior year to work on his company full time. Sutherland founded Quizlet his sophomore year of high school, when he first had the idea to create a flashcard program

creative and curious. Almost everything I've learned is from other students — everyone is a genius at something and everyone is always working on a project; MIT is the best personal decision I made."

Hone your skills

"Start hacking on cool shit."

So says Dan Wheeler '06, who currently works at Dropbox. Undoubtedly, it takes more than a lofty idea to make a successful startup — the best preparation comes from personal experience and side projects.

Wheeler says that during his time as a student, he was amazed at the projects his classmates created in both their free time and their classes.

"Any time you're in a Course 6 class, there's that one team that makes a final project that's a technical marvel and blows everyone away — I remember someone threw away the physics engine we were supposed to use and made their own for 6.170 (Laboratory in Software Engineering). That's the type of mindset you really need — the essence of startups is ridiculous hacks, cool stuff you do just because it's fun."

The importance of strong technical skills cannot be overstated. Varenhorst says, "Even when you have an idea, if you don't know how to build it, it's hard to imagine how it could be or where it could go. It can be hard to find someone that really shares your vision to build it for you. You're in a really powerful position when you can execute your own ideas."

"Every time an MIT kid works for a Harvard or Stanford startup, a baby transistor dies," jokes Wheeler.

Besides gaining technical skills, working on side projects is also a good way to find co-founders.

"When you build stuff for fun, it gives you the highest likelihood of meeting similarly minded people. And when you've already worked with people before on past projects, there's much less risk, and a

work do not always have to be at odds with each other. Rustagi, who majored in Course 2A with a focus in product design, thinks that they can complement each other. "You can always optimize your class work to help your startup. For example, we took 15.390 (New Enterprises), which taught us how to make a business plan and really develop our idea. It's important to know what you want to get out of a class. I walked into 2.008 (Design and Manufacturing II) wanting to deeply understand product design, 2.005 (Thermal-Fluids Engineering I) not so much."

Amarasiwardena, who majored in Course 10 added, "Focus on what you care about, and spend time and energy on what you think will be valuable. I really enjoyed ICE and learning about managing supply chains, which has been really useful to us in our startup."

Freedom and Independence

Many students find startups appealing for the freedom and independence they offer. Rustagi and Amarasiwardena say that they enjoy the amount of control they have over their product and the opportunities for self-growth. "We can really take a lot of ownership over the product, something that wouldn't be possible at a larger company. For example, we often have to think creatively with limited resources — we designed our own packaging for the product using a \$2 tube and a 99-cent poster, and we made the vector graphics ourselves. It's really nice to work on skills that you might not already have that help the business."

Rustagi added that the amount

at MIT, he felt frustrated with the dialogue about startups, and wanted to generate more discussion.

"Startups at MIT can be a lonely world — when you're choosing your career, it seems like there are really a few paths presented to you. Either one, you go to grad school; two, you work for a large company like Microsoft or Oracle; or three, you go into trading, finance, or consulting. Startups are like the cool new thing now, but I remember when people wouldn't even use the word startup. It was looked down upon, like 'Oh, so you couldn't get a different job,' regardless of whether or not you chose to do it."

Grinich says that he sees Startup Bootcamp fitting into the greater startup ecosystem at MIT. "It's almost like a meta-startup, by getting more people to start their own companies. When people graduate and wonder what to do next, they could think back to this event, and maybe consider starting their own company — in fact, by my last count, a couple dozen people have started companies, just from meeting the other people who were there."

Another resource is StartLabs, a non-profit organization founded in 2011 by two MIT graduate students that aims to help students



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